APPENDIX L. Land Protection Plan

Steigerwald Lake National Wildlife Refuge, Clark County, and
Franz Lake National Wildlife Refuge, Skamania County, Washington

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May 2004

U.S. Department of the Interior
Fish and Wildlife Service

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1.1 INTRODUCTION

This Land Protection Plan (LPP) provides a description of the biological resources, threats to the resources, habitat protections needed, and land acquisition methods for privately held lands within the existing approved boundaries of the Steigerwald Lake and Franz Lake National Wildlife Refuges. Individual tracts within the approved boundaries and their priority for acquisition are depicted in Tables 1 and 2. Contingent upon funding availability, the Service would purchase fee title or easement interests from willing sellers of privately owned land. There is also the potential for entering into a cooperative management agreement with the Port of Camas-Washougal for two tracts at Steigerwald Lake National Wildlife Refuge and with the U.S. Forest Service (FS) for three tracts at Franz Lake National Wildlife Refuge. Should the U.S. Fish and Wildlife Service (Service) acquire these tracts, this LPP describes in conceptual terms the proposed management. Specific management actions and their associated impacts are evaluated elsewhere in the Comprehensive Conservation Plan.

1.2 PROJECT DESCRIPTION

This project involves a review and prioritization of the inholdings at Franz Lake and Steigerwald Lake National Wildlife Refuges. The inholdings were evaluated based on their wildlife value and the protection of rare bottomland hardwood forests, mixed deciduous forest, and associated riparian communities.

1.3 THREATS TO AND CONDITION OF THE BIOLOGICAL RESOURCES

This section describes the biological resources associated with each inholding tract, the threats facing them, and their current condition. The locations of the tracts are shown in figures1 and 2.

Steigerwald Lake National Wildlife Refuge

Tract 9: The 28.9-acre Tract 9 contains approximately 2.5 acres of riparian habitat contiguous with the cottonwood bottomland forests of Steigerwald Lake National Wildlife Refuge. The rest of the Tract is primarily unmanaged reed canary grass. Development is an imminent threat to Tract 9. Recent realignment of the Gorge Scenic Area boundary has exempted the western portion of the Tract from Scenic Area designation and restrictions. Only the eastern portion of the Tract remains within the Scenic Area. Future expansions of industrial facilities associated with the Port of Washougal/Camas may either adjoin or utilize

portions of Tract 9.

Tract 9a: Historic photos show Tract 9a as a portion of a larger riparian forest stretching to the east and north. The forest was cleared and subsequently utilized as a pasture and feedlot for cattle and has since regressed to weedy fields. Development is an imminent threat to Tract 9a. Potential expansion of the Port of Washougal/Camas may either adjoin or utilize portions of the Tract. Only portions of the Tract are protected by land use restrictions imposed by the Gorge Scenic Area. Tract 9a is bordered by a dike and a public use trail which causes disturbance and limits the resource values.

Tract 12a: Over the decades, Steigerwald Lake has been diked, channelized, and drained which has reduced the wetland complex and isolated it from the Columbia River's hydrology. Portions of Tract 12a were formerly wetland and wet meadow communities when natural hydrology existed in the basin. Currently, the operational size of Steigerwald Lake is limited by multiple ownerships and land use practices within the basin. Agricultural interests in Tract 12a dictate water elevation to avoid inundation of adjacent pastures. The U.S. Army Corps of Engineers' current draft Feasibility Study is examining options to restore natural hydrological processes to Steigerwald Lake. Should these processes be restored, flooding threats to Tract 12a will have to be resolved by acquisition, diking, or easement.

Tract 12a contains several acres of a larger intact 400-acre oak woodland known as the Washougal Oaks which represents the largest and most intact Oregon white oak/oval-leaved viburnum/poison oak woodland in the region. This type of oak woodland is rare in Washington as all other occurrences are fragmented and of lower quality. Due to the limited geographic distribution, this community is identified as Globally Critical (G1 status) by the Washington Natural Heritage Program. In the future, the State of Washington may be interested in acquiring the adjoining oak woodlands outside of the Refuge boundary for inclusion in either a Natural Area Preserve or Natural Resource Conservation Area. These oak woodlands continue to be vulnerable to fragmentation as lands are being converted to agriculture and used for development. Approximately 41 acres of quality oak woodlands have been acquired by the Service for protection along the northern boundary of Steigerwald Lake. Acquisition of Tract 12a would continue to secure remnants of the Washougal Oak community from continued fragmentation and habitat reductions. Tracts 12a, 19, and 20 are the last remaining properties with remnant oaks that have yet to be acquired within the approved Refuge boundary.

Tract 19: Tract 19 is a 0.6-acre portion of the larger intact 400-acre oak woodland on Tract 12a (referenced above). Of the remaining properties to be acquired (Tracts 12a, 19, and 20), Tract 19 is the smallest and has the most edge habitat, and therefore, is a lower priority for acquisition than Tracts 12a and 20.

Tract 20: Tract 20 contains 1.2 acres of Oregon white oak/oval-leaved viburnum/poison oak woodlands (importance of this habitat described above for Tract 12a).

Franz Lake National Wildlife Refuge

Tract 1a: Tract 1a encompasses mixed deciduous forest. Unauthorized access by foot from both Highway 14 and the adjoining FS Recreation Area has the potential to significantly reduce wildlife use and sanctuary values within Franz Lake National Wildlife Refuge.

Tract 1b: Tract 1b is hydrologically significant to the Refuge and its resources. Franz and Arthur Lakes are largely supported by the Indian Mary Creek watershed, precipitation, and adjoining springs and seeps. Additionally, water from the Columbia River backfills into Franz and Arthur Lakes through Tract 1b when River levels are elevated. During low River conditions, the topography of Tract 1b coupled with beaver lodges throughout the area maintain wetland conditions within Franz and Arthur Lakes. Anadromous salmonids (listed, proposed for listing, or candidates for listing under the Endangered Species Act) from the Columbia River migrate to Refuge rearing and spawning habitats through Tract 1b. Preliminary censuses suggest several salmon species, particularly fall chinook, use the Refuge backwater wetlands as off-channel rearing habitat. Bottomland hardwood deciduous forests of Tract 1b are contiguous with riparian areas on the Refuge, supporting a diverse assemblage of nesting neotropical songbirds. Rock outcrops and several unique basalt spires occur within the northern half of the Tract. Acquisition of Tract 1b would secure Service ownership of both the entire shoreline of Arthur Lake and the water entrance to the Refuge from the River. Acquisition of Tract 1b would consolidate and simplify the Refuge boundary along Highway 14 and adjoining the FS's Recreation Area. The Service could better control access points to Arthur Lake by foot and into the wetland complex by boat. Currently, unregulated access into Tract 1b has the potential to significantly reduce wildlife use and sanctuary values throughout much of the Refuge.

Tract 1c: Tract 1c contains riparian communities contiguous with Service owned mature bottomland forest located within Tract 11. Within the Service-owned portion of the forest is an ancient riparian grove containing four cottonwoods with six to eight foot diameters, as well as other large trees. Due to their large size, the cottonwoods represent near record specimens for Washington State. Conservation of the forest within Tract 1c is critical to maintaining habitat attributes within the adjoining Service riparian areas. Actions that could jeopardize the buffer width or integrity of Tract 1c riparian areas could compromise the continued viability of the ancient trees within the Refuge. The FS has developed a Recreation Area adjoining Tract 1c. Trespass from unofficial spur trails onto the Refuge is likely, presenting an ongoing threat to the Refuge and its resources.

Tract 12: Tract 12 has been largely cleared. Perimeter woodlands remain, consisting of mixed fir, maple, and mature Oregon white oak. Presently, disturbance to wildlife from Tract 12 is presumed minimal due to the screening of structures and activities by natural vegetation. Additionally, existing buildings are set back from the boundary line reducing disturbance potential. However, actions that would expose Franz Lake to Tract 12 could significantly reduce wildlife and sanctuary values, particularly during the winter. Potential

threats to Refuge resources would include reductions to buffering vegetation, construction of additional structures, and increases in noise. Portions of Tract 12 are in close proximity and within line-of-site of Franz Lake, and have high potential for wildlife disturbance. During high spring water levels Franz Lake may expand to the south boundary of Tract 12. During these times, small boats can be launched from Tract 12 into Franz Lake. Acquisition of Tract 12 would allow the Service to regulate access points and disturbance to Franz Lake.

Tract 13: Acquisition of Tract 13 would secure Service ownership of the entire shoreline of Franz Lake. Unregulated boat access to Franz and Arthur Lakes through Tract 13 has the potential to significantly reduce wildlife use and sanctuary values over much of the Refuge. Increased development or activity within Tract 13 poses a potential threat to the Refuge due to the proximity and exposure of the Tract to Franz Lake. A significant attribute of this area is that Indian Mary Creek transects Tract 13. With acquisition of Tracts 13 and 18a, the Service would be able to manage the lower Indian Mary watershed. Restoration efforts on Tract 13 would involve removal of migration barriers for salmon in Indian Mary Creek, reestablishing riparian vegetation along the shoreline of Franz Lake, controlling invasive species, and expanding oak savanna on the upper cleared terraces.

Tract 15: Tract 15 is very narrow and bordered by roadways and railroad tracks. The high degree of edge and proximity to developed areas limits the potential for quality habitat. The Tract is within the Indian Mary watershed and has value in protecting and buffering water quality and natural resources withing the drainage.

Tract 17b: Acquisition of Tract 17b would secure approximately 7 acres of mixed deciduous forest near Indian Mary Creek. Potential threats to this Tract include development and timber harvest.

Tract 18: Acquisition of Tract 18 would secure a contiguous 120-acre forested block within the Indian Mary watershed in Service ownership. Potential threats to this Tract include development and timber harvest. Forest practice restrictions and Scenic Area rules afford the watershed protection from significant impacts. The forested uplands are vulnerable, however, to harvest and other land use disturbances. These actions may reduce habitat and water quality attributes within the watershed. Existing safeguards against these threats are inadequate.

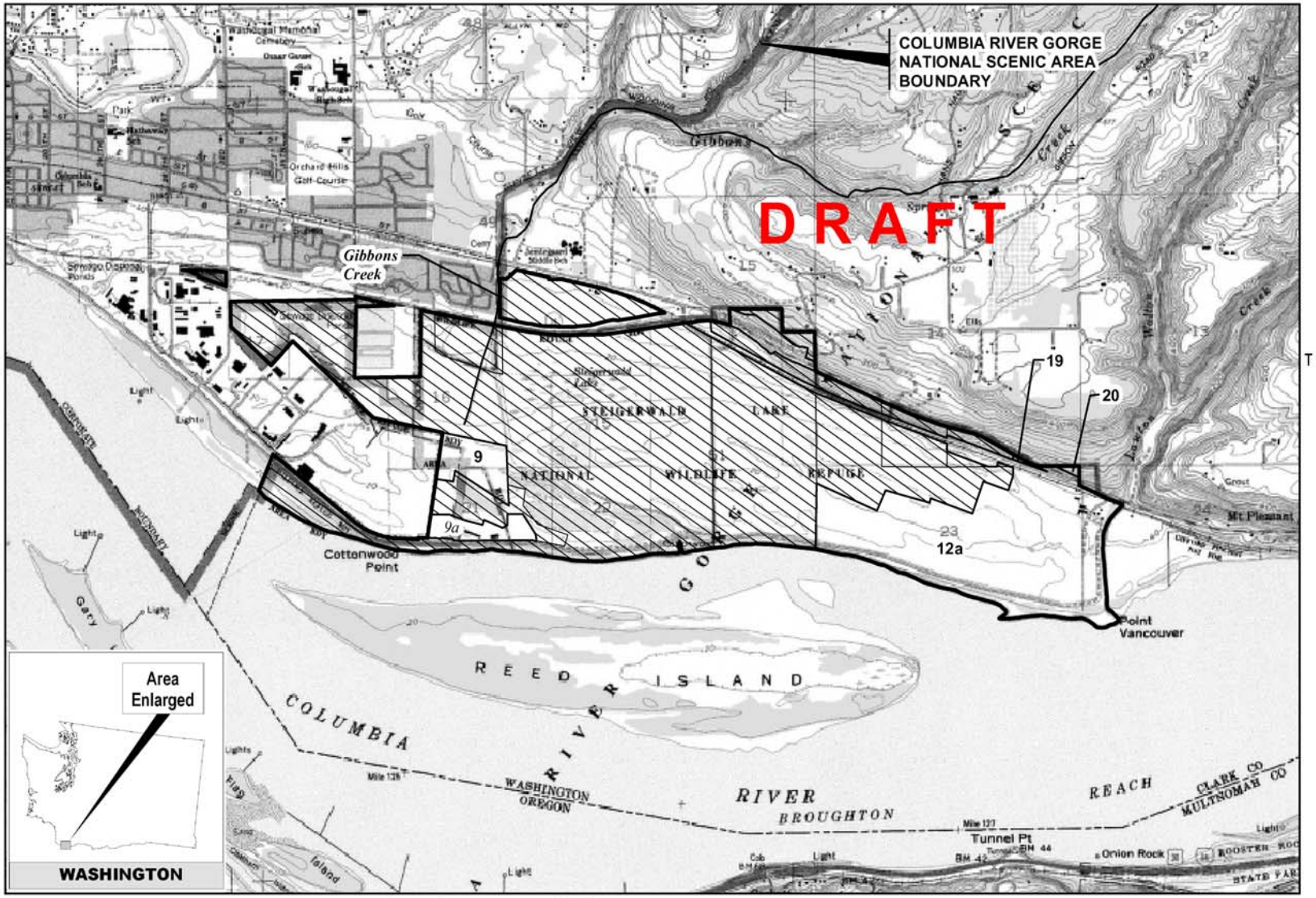
Tract 18a: Tract 18a is situated between Highway 14 and the railroad. The Tract contains a short segment of Indian Mary Creek. Threats to the Tract include the stream crossings associated with these major transportation corridors and the limitations they impose on fish passage. An evaluation of these crossings is needed to determine ways to improve fish passage into Tract 18a and beyond.

U.S. Fish & Wildlife Service

Land Ownership within the Approved Steigerwald Lake

National Wildlife Refuge

Clark County, Washington



Legend

- Approved Refuge Boundary
- FWS Acquired Parcels
- Unacquired Parcels

0 0.25 0.5 1 1.5 2 Miles

0 0.25 0.5 1 1.5 2 Kilometers

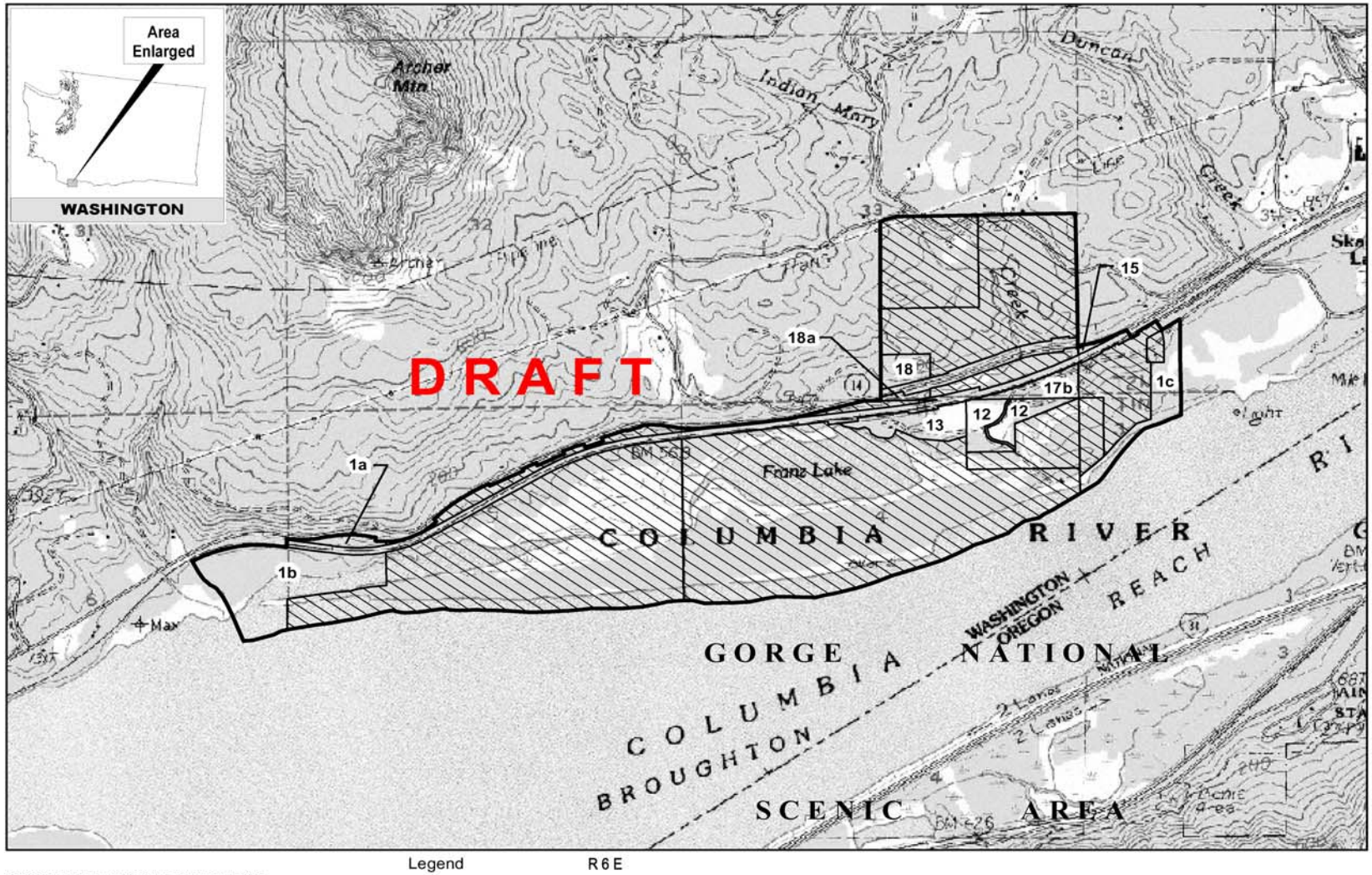
PRODUCED FOR THE DIVISION OF REFUGE PLANNING
PORTLAND, OREGON
MAP PROJECTION: NAD_1983_UTM_ZONE_10N
GRATICULE UNITS: DEGREES, MINUTES, SECONDS
MAP GRID UNIT: METER
WILLAMETTE MERIDIAN
PRODUCTION DATE: 9/30/03

U.S. Fish & Wildlife Service

Land Ownership within the Approved Franz Lake

National Wildlife Refuge

Skamania County, Washington



Legend

- Approved Refuge Boundary
- FWS Acquired Parcels
- Unacquired Parcels

0 0.125 0.25 0.5 0.75 1 Mile

0 0.125 0.25 0.5 0.75 1 Kilometer

PRODUCED FOR THE DIVISION OF REFUGE PLANNING
PORTLAND, OREGON
MAP PROJECTION: NAD_1983_UTM_ZONE_10N
GRATICULE UNITS: DEGREES, MINUTES, SECONDS
MAP GRID UNIT: METER
WILLAMETTE MERIDIAN
PRODUCTION DATE: 9/30/03

1.4 HABITAT PROTECTION METHODS

Steigerwald Lake National Wildlife Refuge
The Service would pursue a cooperative management agreement with the Port of Camas-Washougal for two tracts at Steigerwald Lake National Wildlife Refuge and either fee title or easement interests from willing sellers for the private land.

Franz Lake National Wildlife Refuge
The Service would pursue a cooperative management agreement with the FS for federally owned lands within the approved acquisition boundary to be managed as part of the National Wildlife Refuge System. Another option could be the Service acquiring ownership of the three Tracts owned by the FS through a no cost Federal land transfer of the fee title from the FS to the Service. With regard to the private land, the Service would pursue either fee title or easement interests from willing sellers.

1.5 LAND PROTECTION PRIORITIES

The Service assigned each property a Tract Number associated with the name of the landowner and provided the County Assessor's Parcel Number (APN) for each parcel (table 1 and 2). The Service also assigned each parcel a priority for protection based on the value of the parcel for conservation and management purposes. A preferred method of protection was determined for each parcel as well, considering the options of cooperative agreement, fee title, and easement. Service policy is to acquire the minimum interest in land necessary to achieve refuge resource conservation goals and to include entire ownerships (mainly for appraisal purposes) in the project area, even though only a portion may contain wildlife habitat of interest.

Table 1. Land Protection Priorities for Steigerwald Lake National Wildlife Refuge

Service Tract Number	Landowner of Record	County APN Number	Parcel Acreage	Protection Priority[1]	Preferred Protection Method[2]
9	Port of Camas-Washougal	135308-000	28.9	2	C
9a	Port of Camas-Washougal	135307-000	19.6	2	C
12a	James, Sharleen	135508-000	290	1	F
19	Schmid Family LTD Partnership	133918-000	0.6	3	F
20	Schmid, G.J., Emma, et al	135507-000	1.2	2	F

[1] Protection priorities are in the order of "1," "2," "3," with "1" being the highest priority for acquisition.

[2] The preferred method of protection is symbolized "C" for cooperative agreement between agencies and "F" for fee title acquisition from willing sellers.

Table 2. Land Protection Priorities for Franz Lake National Wildlife Refuge

Service Tract Number	Landowner of Record	County APN Number	Parcel Acreage	Protection Priority[1]	Preferred Protection Method[2]
1a	USA	N/A	3.2	2	C
1b	USA	N/A	44	1	C
1c	USA	N/A	15	2	C
12	Price, Tom	01-06-04-0-0 -0101-000	41.43	1	F
13	Price, John Otus	01-06-04-0-0 -0102-00	12.6	1	F
15	Price, Tom	02-06-34-0-0 -1904-00	.91	3	F
17b	Price, Tom (et al)	FWS exchange	7.25	3	F
18	Bosshart, John	02-06-33 -0-0-1700-00	12.8	2	F
18a	Bosshart, John	02-06-33 -0-0-1700-00	1.4	1	F

[1] Protection priorities are in the order of "1," "2," "3," with "1" being the highest priority for acquisition.

[2] The preferred method of protection is symbolized "C" for cooperative agreement between agencies and "F" for fee title acquisition from willing sellers.

1.6 FUNDING

Federal funds to acquire these lands could become available primarily through annual appropriations by Congress from the Land and Water Conservation Fund, Migratory Bird Conservation Fund monies, and Bonneville Power Administration mitigation funds.

1.7 CONCEPTUAL MANAGEMENT

Lands acquired by the Service would be managed as part of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966, as amended. The following discussion covers the proposed management for the unacquired tracts within the approved acquisition boundaries of Steigerwald Lake and Franz Lake National Wildlife Refuges.

Wetland Communities are negatively impacted by the dike system which prohibits Columbia River inflow and outflow, rechannelization which isolates Gibbons Creek from the basin, the lack of an alternate water delivery system, and a fill-and-hold settling pond conducive to invasive plants and nonnative wildlife. Despite these conditions some native plants have persisted, such as cattail and other remnant emergent and submergent vegetation. However, these native plants are unable to compete with reed-canary grass throughout much of the wetland area. Multiple ownerships adjoining the Refuge make it challenging for the Service to optimize wetland size and function. Under Service ownership of the former floodplain, the Service would actively flood a larger portion of the historic lakebed and to periodically connect perched wetland benches. Securing significant portions of the former lakebed would also facilitate the U.S. Army Corps of Engineers' current draft Feasibility Study to restore natural hydrological processes to Steigerwald Lake. The Service would protect and restore floodplain communities including scrub shrub, emergent wetland, and wet meadow. Active management would reduce invasive plant species while promoting native tall and short emergent plant species.

Riparian Bottomland Forests: Former land use practices have reduced the size and function of riparian communities on Steigerwald Lake National Wildlife Refuge. Forests were presumably cleared to increase the area available for agriculture. Grazing within riparian areas reduced native shrub layers and suppressed the recruitment of native saplings into sub-canopy and upper canopy layers. These mechanisms have created riparian areas at Steigerwald Lake consisting of mature trees with understory layers consisting largely of invasive nonnative plants. The natural landscape setting of riparian communities is largely within the lower portion of the floodplain, therefore, subject to periodic flooding and increased soil moisture. Diking of the Steigerwald Lake basin has drastically altered these hydrological processes creating conditions less suited to native floodplain communities. Remnant riparian communities would be an acquisition priority to secure these habitats from further degradation. Management of these areas would involve reducing nonnative invasive plant species and reestablishing components of the native shrub layer. Opportunities would be explored to acquire low elevation grasslands adjoining remnant riparian areas. These areas are well suited for expansion of riparian areas through either direct planting or exposing soils to natural seedfall. Riparian areas on Steigerwald Lake National Wildlife Refuge are often narrow and structurally deficient. Acquisition of lands containing or adjoining remnant riparian areas afford the Service the opportunity to restore these communities to sufficient widths and complexities to achieve a full array of beneficial ecological functions to support a diverse array of riparian dependant plants and animals.

Grasslands: Many tracts within the approved acquisition boundary of Steigerwald Lake National Wildlife Refuge contain some extent of grasslands. These grasslands largely consist of either introduced pasture species or invasive nonnative grasses. There are no known intact native upland prairie or wet meadow communities remaining in the vicinity of the Refuge. Acquired grasslands would be evaluated relative to their landscape perspective and wildlife potential. Select areas managed as short pastures may be well suited as green forage for wintering Canada geese. Continued monitoring by the Service of wintering

Canada geese would help delineate the appropriate area to manage as shortgrass pastures relative to the number of wintering waterfowl. Appropriate grasslands may be managed in tall old field condition to support grassland species including ground nesting birds, mammals, amphibians, and reptiles. Strategic old field grasslands would be maintained to function as connective corridors between habitats and to buffer adjoining native habitats. When ecologically feasible, acquired grasslands may be restored to native plant communities. The landscape perspective would dictate suitable restoration locations for these native plant communities; wet meadow, emergent wetland, native upland prairie, riparian bottomland forest, riparian scrub shrub, oak savanna, and oak woodland.

Oak Communities: Oak habitats can be broadly defined as oak woodlands and oak savanna. However, considerable gradation naturally occurs between these two types. Oaks occurring on Steigerwald Lake National Wildlife Refuge, are on the southern border of an intact 400-acre oak woodland known as the Washougal Oaks. This oak woodland represents the largest and most intact Oregon white oak/oval-leaved viburnum/poison oak woodland in the region. This type of oak woodland is rare in Washington as all other occurrences are fragmented and of lower quality. Due to the limited geographic distribution, this community is identified as Globally Critical (G1 status) by the Washington Natural Heritage Program. Acquisition of oak communities adjoining the Washougal Oaks supports local conservation efforts to establish a Natural Area Preserve or Natural Resource Conservation Area for protection of these woodlands. Oak woodlands acquired by the Service would be protected from fragmentation. Management of the woodlands may include Himalayan blackberry control along the woodland edges with herbicide or mechanically. Where ecologically feasible, management on acquired lands may include planting oaks above the floodplain along the north shoreline of Steigerwald Lake.

Franz Lake National Wildlife Refuge

Wetland and Riverine Communities: Acquisitions to secure Service ownership or management of Arthur Lake and adjoining riverine wetlands are a priority. These habitats may be obtained either through a land transfer or a cooperative management agreement with the Forest Service. Unacquired areas in the vicinity of Arthur Lake contain significant hydrological and topographic features which maintain both the Franz and Arthur Lake wetland complexes. If acquired, the Service would protect these features from development or manipulation. Management would retain Columbia River hydrology, allowing backwater flood events and movements of anadromous salmonids (listed, proposed for listing, or candidates for listing under the Endangered Species Act) from the Columbia River to Refuge rearing and spawning habitats. Evaluation of compatible wildlife-dependent recreation opportunities may include a limited seasonal ingress into the Refuge along a water trail. This trail would facilitate wildlife observation, photography, environmental education, and interpretation.

Riparian Bottomland Forest: Unacquired bottomland forests adjoining Franz Lake support Refuge habitat objectives of maintaining large contiguous riparian blocks to support native wildlife. Securing these forests would allow the Service to control access points into the Refuge's interior stemming from adjoining FS Recreation Areas. Service owned riparian

areas support a mature cottonwood forest with near record cottonwoods for Washington State. The Service would control activities that would jeopardize the buffer width or integrity of the adjoining unacquired riparian area could compromise the continued viability of these ancient trees.

Mixed Deciduous Forests: Mixed deciduous forests occur predominately above the floodplain along the north shoreline of Franz and Arthur Lakes. Areas containing this plant community typically border Highway 14 and private properties along Franz Lake. These areas are typically steep sloping into the wetland. Maintaining the integrity of these communities would reduce runoff and siltation within the Lakes and their watersheds. Conservation of mixed deciduous forests is significant to buffering the wetland complex from disturbance associated with the Highway and private parcels. The Service would protect these plant communities for the wildlife values they support on Franz and Arthur Lakes, particularly in the winter months when swans concentrate on the lakes. Acquisition of tracts containing mixed deciduous forests would largely consolidate the Refuge boundary along Highway 14. This simplified boundary would facilitate the control of unofficial access points into the Refuge's interior.

Developed and Agricultural Lands: The current viewing platform for Franz Lake is situated on the shoulder of Highway 14 and adjacent to the railroad track. Noise pollution from vehicles and trains detracts from wildlife-dependent recreation in this location. Also, the space and viewing distance are not optimal for RV's, busses, or other large vehicles. As an alternative, the Service would consider establishing wildlife-dependent recreation sites on Tract 12 closer to Franz Lake, allowing space for visitor services, routing the public use away from the major transportation corridors, and potentially improving public safety.

The close proximity of cleared agricultural and previously developed tracts adjacent to Franz Lake makes these locations favorable for wildlife observation and photography and environmental education and interpretation. Elevated locations on these developed areas could offer viewpoints of the Refuge against a background of the Gorge Scenic Area. The Service would consider using cleared areas for parking, kiosks, and restrooms, limiting both habitat loss and negative impacts associated with these facilities. Oak trees might be landscaped into the clearings to expand open savanna habitats and to screen public use facilities while maintaining a view shed for visitors. Site planning would have to incorporate proper set backs, screening vegetation, and appropriate buffers to ensure that sanctuary values of the Refuge are not compromised.

Coniferous Forest and Indian Mary Watershed: Acquired forested uplands within the Indian Mary watershed would be managed to protect the water source of Franz and Arthur Lakes from adverse land use practices. These areas would be kept intact to maintain a functional buffer within the Indian Mary Watershed. This area is partially protected by Gorge Scenic Area restrictions and forest management guidelines. However, permitted timber harvest and other commercial activities could reduce habitat and water quality attributes. Thus, adding tracts within the watershed to the Refuge would safeguard against these potential threats. Several small parcels would contain portions of Indian Mary Creek. Service ownership of these properties could facilitate evaluation of fish barriers within the watershed. Future

actions the Service might undertake may include improvements to passage and reestablishing riparian vegetation, especially in the lower watershed.

1.8 COORDINATION

The Service held public scoping meetings in the Towns of Washougal and Stevenson on September 20 and 21, 2003, regarding development of the Comprehensive Conservation Plan (CCP) for the Steigerwald Lake, Franz Lake, and Pierce National Wildlife Refuges. The Service provided a Planning Update describing the CCP effort at the public scoping meetings and to the Refuges' mailing list. The purpose, need, and alternatives for the conservation and management of refuge fish, wildlife, and plants and protection of their habitat was presented and discussed at the public scoping meetings.

Prior to the public scoping meetings, the Service sent letters to the Confederated Tribes of the Warm Springs Reservation, Chinook Tribal Council, Yakama Nation, Clark and Skamania Counties, Washington Department of Fish and Game, the U.S. Forest Service, Congressional officials, and other interested organizations and individuals informing them of the development of the CCP and the upcoming public scoping meetings.